

Industrial and Food Microbiology and Biotechnology

P-240 - PRODUCTION OF AN ANTILISTERIAL MEDIUM TO BE USED IN THE INDUSTRY OF PORTUGUESE TRADITIONAL MEAT PRODUCTS

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Background

Listeria monocytogenes is a great concern in the industry of Portuguese traditional meat products. Bacteriocins, produced by lactic acid bacteria (LAB) are of great importance in order to face this concern. The reason for that is because some bacteriocins have demonstrated antimicrobial activity against *L. monocytogenes* and do not alter the organoleptic characteristics of the products.

Although MRS broth can fill some fastidious growth requirements of many LAB, it cannot be used in the food industry, not only because it is very expensive, when used for large-scale commercial applications, but also, it contains constituents not approved in food production.

The objective of this study was to seek for a food grade medium that could promote growth of an autochthonous strain of *Lactobacillus* and production of bacteriocin active against *L. monocytogenes*.

Method

From previous studies with different LAB, isolated from traditional meat products, an autochthonous *Lactobacillus* strain was selected since it demonstrated antimicrobial activity against *L. monocytogenes* and do not alter the organoleptic characteristics of the tested products.

The maximum antilisterial activity (five strains) was when the selected *Lactobacillus* strain was grown in MRS broth, in reconstituted skimmed milk (RSM, 11% w/v) and in an inexpensive food grade medium with high protein content, for 39 h at 37 °C.

Results & Conclusions

For the three media, results showed that the maximum antilisterial activity was dependent on the target strains of *L. monocytogenes*.

When grown in MRS, the maximum antimicrobial activity was about 12800 Au/mL and it was reached after 16-39 hours of growth. In RSM the maximum antimicrobial activity (6400 Au/mL) was observed between 16 and 30 hours of growth. In the food grade medium the maximum antimicrobial activity was 6400 Au/mL and it was achieved after 16 and 39 hours of growth.

This medium demonstrated to be a potential alternative to grow bacteriocinogenic *Lactobacillus* at industrial scale.

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